

ABSTRACT

A digital amplifier (21) causes a gate drive circuit (28, 29) to drive output transistors (Q21 to Q24), and switches a power source voltage (V0) supplied from a variable voltage power source (30), thereby amplifying an amplitude of a 1-bit digital signal outputted from a $\Delta\Sigma$ block (22). A variable voltage power source (32) varies a driving voltage, by which an upper gate drive circuit (28) drives output transistors (Q21, Q23), as a voltage (V0+V1) obtained by adding (i) a constant voltage (V1) supplied to a lower gate drive circuit (29) to (ii) a power source voltage (V0), so as to correspond to the power source voltage (V0). Thus, the driving voltage is minimized without influencing a switching operation of the output transistors (Q21, Q23). As a result, it is possible to reduce power consumption of the upper gate drive circuit (28) in turning down the volume.